



# **U.S. Geological Survey**

## **Refocused Strategic Plan**

**1997 - 2005**

January 21, 1999

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## Government Performance and Results Act

### Quick Reference

#### U.S. Geological Survey - Strategic Plan

Statute Reference	Required Component	Location
306(a)(1)	comprehensive mission statement	See page 7.
306(a)(2)	general goals and objectives	See pages 10-12, p. 15
306(a)(3)	Description of how the goals and objectives are to be achieved	See pages 12-13, p 15-16.
306(a)(4)	Description of how performance goals included in the (annual performance plan) shall be related to the general goals and objectives	See page 20.
306(a)(5)	Key external factors	See pages 13-14, p. 16-17.
306(a)(6)	Program evaluations	See pages 21-27

# Strategic Plan for the U.S. Geological Survey, 1997 - 2005

## Introduction

The U.S. Geological Survey is the Nation's largest water, earth, and biological science and civilian mapping agency. The USGS works in cooperation with more than 2,000 organizations across the country to provide reliable, impartial scientific information to resource managers, planners, and other customers. This information is gathered in every State by USGS scientists to minimize the loss of life and property from natural disasters; contribute to the sound conservation, as well as the economic and physical development of the Nation's natural resources; and enhance the quality of life by monitoring water, biological, energy, and mineral resources.

## Rationale for Adjusting the Strategic Plan

DOI/IG, OMB, GAO, and Congressional Institute "Report Cards" and discussions on the Department's first GPRA Strategic Plans, FY 1999 Annual Plans, and linkage to the FY 1999 budget have all emphasized the need to reduce the complexity and number of goals and measures, improve the clarity of performance information, and improve the linkage of funding to performance and strategy implementation. John Berry, the Department's Assistant Secretary for Policy, Management and Budget, at a GPRA hearing before the House Resources Committee on April 22, 1998, expressed the Department's commitment to accountability and to measuring and reporting the successes achieved by the Department. The Department initiated analyses of performance data baseline and performance management systems across all Bureaus, piloted tracking of performance against the Bureaus FY 1999 annual plans, and established a Performance Management Council with representatives from all Departmental Bureaus, as well as their Planning and Policy, Budget, Human Resources and Information Technology Offices to guide the process of revising, reformatting, and refocusing the Department's strategic and annual plans.

The USGS concurrently concluded that its September 1997 Strategic Plan needed to be reexamined in a scientific management context rather than a solely scientific context and needed a streamlined organizational approach to better communicate interrelationships and corporate responsibilities.

The USGS has gained considerable experience in the inherent advantages and disadvantages in communicating, budgeting, and implementing the current USGS Strategic Plan through the various phases of analyses and implementation over the past year. The September 1997 GPRA Strategic Plan and the more detailed discipline-centric plans developed over the past year were

used as the basis for adjusting the Strategic Plan described in this document. Revision of our Strategic Plan was designed to

- clarify our strategic direction;
- improve communication of who we are, what we do, and our value to the Nation;
- simplify communication and linkage of the strategic and annual plans with the budget to improve accountability; and
- improve alignment of the strategic plan with the Department's overview

## A Balanced Scorecard Approach

USGS chose to use a modified Balanced Scorecard approach to revise its Strategic Plan. This approach is a strategic management system to:

- (1) clarify and translate vision and strategy;
- (2) communicate and link objectives and measures;
- (3) plan, set targets, and align strategic initiatives; and
- (4) enhance strategic feedback and learning.

After reconfirming our basic vision and mission, we developed a customer-focused strategic direction. Using the Balanced Scorecard approach, we simultaneously developed goals and performance measures for customers, programs, people, and operations. The customer goals both drive and provide feedback for the program goals. The operations and people goals (means-type goals) provide for the infrastructure and human resource skills needed to accomplish the program goals. The Program goals are the focus of the GPRA Strategic and



Annual Plans, with people and operations goals serving as foundations for the strategy sections.

## **Scope and time frame**

This strategic plan represents an interim adjustment in the scope of the USGS plan that was submitted to the Congress on September 30, 1997, broadening it from selective science directions to all parts of the organization. However, the basic science goals of the organization remain intact, and have been combined into 2 overarching, long-term goals. The mission statement, while slightly rephrased, remains substantively unchanged. The plan covers major functions and operations of the USGS through September 2005. The adjustments and modifications more clearly represent our goals and our strategies for achieving those goals. The key external factors have been differentiated to align with the long-term goals. The next update of the plan is due in September 2000.

## **Science/Research, and Performance Measurement**

The problems inherent in measuring scientific performance have been discussed among Federal science organizations since passage of GPRA and are well recognized. USGS' primary product is scientific information. Quantitative measures of our productivity are tangible and directly related to inputs, but they are primarily outputs (e.g., number of scientific papers published, data collected,...) that convey little sense of the true benefits gained by the American people from the information we produce. In contrast, quantitative outcome measures (e.g., the acreage of ecosystems restored) are often intangible and are only indirectly linked to USGS outcomes.

The results of research are not predetermined — by definition science is objective, impartial, and credible. Further, science is often not the only factor that is germane to a management-strategy decision. The scientific information we produce provides alternatives and predicts their outcome, but no matter how “good” the science may be, it in itself cannot achieve the desired outcome. It remains for the user of the scientific information who does or does not make a science-based decision to determine how useful the information was in making the decision, to measure the outcome achieved by the decision, and ultimately acknowledge the utility of the science in achieving the desired outcome.

If the science we provide is not used because it is outweighed by other factors, then the resulting outcomes are beyond our control. If the science we provide is not used because it was not useful or timely, we can and should be held accountable. Our research will continue to be peer reviewed and our programs cyclically evaluated to ensure the quality of our science. That is also why we have revised the strategic and annual plans to focus on provision of quality science to customers for solving the Nation's complex land and resource management problems and to minimize the loss of life and property from natural disasters.

## Driving Forces

Powerful forces in the world are driving a dynamic, uncertain environment in which society as a whole is evolving. These forces--which both significantly influence and create alternatives for the USGS--will shape the future of the United States, the needs of the public, and the roles of Federal agencies. These driving forces affect the quality of life of all citizens of the United States. Opportunities to help enhance and protect our quality of life by providing reliable scientific information depend on how these forces evolve and how the USGS responds to them. Of particular importance to the USGS are the following forces:

- **Changing Federal Government Functions:** The role of the Federal government is changing and will continue to change. The change of traditional Federal governmental functions implies significant changes for agencies such as the USGS. The USGS must respond to this changing environment by seeking new partnerships with other U.S. and international agencies to benefit society.
- **New Technologies:** Science is evolving rapidly. The USGS must satisfy demand for timely information in a global information age by using increasingly cost-efficient and responsive new technologies that allow information to flow freely and quickly across political, economic, and intellectual borders.
- **Demographic Changes:** More people are moving to urban areas, coastal zones, and the Sunbelt States. As a result, natural disasters that strike growing population centers will have a magnified impact on human life and the economy. Changes in demographics also affect the competition for and use of resources. For example, as population density increases, there will be new stresses on water resources; different patterns of energy, mineral, and land and water use; and possibly unexpected demands on the infrastructure that supports human health and the quality of life. The USGS must quickly and effectively provide information needed to respond to these changes.
- **Public Investment in Science:** Society's view of science is changing, particularly as scientific issues grow even more complex and do not yield simple answers. Such long-term investments-- perhaps yielding new techniques for detecting signals of impending earthquakes or detecting subtle but significant changes in the environment-- can result in enormous long-term returns on investment. But society must become convinced that solutions will result from long-term investments. The House of Representatives addressed this issue in their October 1998 report "Unlocking Our Future: Toward a New National Science Policy."
- **Society's Concept of " Public Good ":** Private industry is increasingly viewed as a preferred alternative source for some products and services that were, and continue to be,

funded by government. National public science agencies, such as the USGS, can expect continuing debate about whether the science information that they develop is a public good and whether it needs to be produced at the Federal, versus some other level of government or private enterprise.

- **Economic and Environmental Interests:** A larger, more concentrated population stresses and perceives the natural environment in new ways. Greater scientific understanding, together with cost-benefit analyses of the alternatives available to society, can lead to strategies that balance society's need for economic growth with its need to protect the environment. USGS must provide decisionmakers with credible, timely natural science information.
- **Global Interdependence:** Natural earth processes and many human activities have effects that transcend political boundaries. For example, questions of human impact on climate change must be addressed in terms of global environmental and economic issues. The global economy has become increasingly interdependent in recent years. Self-sufficiency in energy and mineral resources is no longer possible, necessitating a global resource mix. USGS information is needed to understand these changes from a natural resource availability, use, and impact perspective.
- **Scarcity and Management of Natural Resources:** Scarce natural resources get attention. Historically, the scarcity of certain resources has caused wars and disrupted national economies. Today, most resources are available, for a price, somewhere in the global economy. However, economics alone does not drive decisionmaking about all domestic resources. The management of finite resources may be subject to considerable debate because of potentially conflicting demands. USGS scientific resource assessments are central to maintaining standards of living worldwide.

## Organization of the plan

The revised USGS Strategic Plan is comprised of 7 sections. The Introduction includes a brief description of the USGS, rationale for revising the plan, a summary of the balanced scorecard approach, the scope and time frame, a description of the challenges in relating science/research and performance management, a synopsis of society's driving forces, and organization of the plan. Following statements of our Vision, Mission, and Strategic Direction, a section is included to show the links between the Department of the Interior and USGS goals, and to clarify differences between this plan and the former USGS Strategic Plan. For each long-term goal, strategies for achieving the goal, key factors affecting goal achievement, cross-cutting relationships to other bureaus and agencies, and applicable general program evaluations are described. The plan contains a section clarifying the relationship between long-term goals and annual performance goals. A section on program evaluations that were used in developing the plan and will be used to



assess performance is included, and is followed by a section describing the consultation process USGS has employed to develop and receive input regarding the plan.

## **Vision, Mission, and Strategic Direction**

Our vision, mission, and strategic direction focus on responsiveness and service provided to our customers, underscoring the relevance and flexibility of science to meet customer needs. They are designed to convey a corporate identity that capitalizes on the combined expertise of our multiple scientific disciplines and that makes a commitment to pursuing a more integrated approach to both our monitoring and research functions for any natural-resource related issue.

The vision, mission, and strategic direction also are consistent with the statutory authorities that created and govern the U.S. Geological Survey. The Organic Act of March 3, 1879, as amended, established the USGS and provides, among other matters, that the USGS is directed to classify the public lands and examine the geological structure, mineral resources, and products within and outside the national domain. A summary of the authorities is included in Appendix B.

### **Vision**

USGS is a world leader in the natural sciences through our scientific excellence and responsiveness to society's needs.

### **Mission**

The USGS serves the Nation by providing reliable scientific information to:

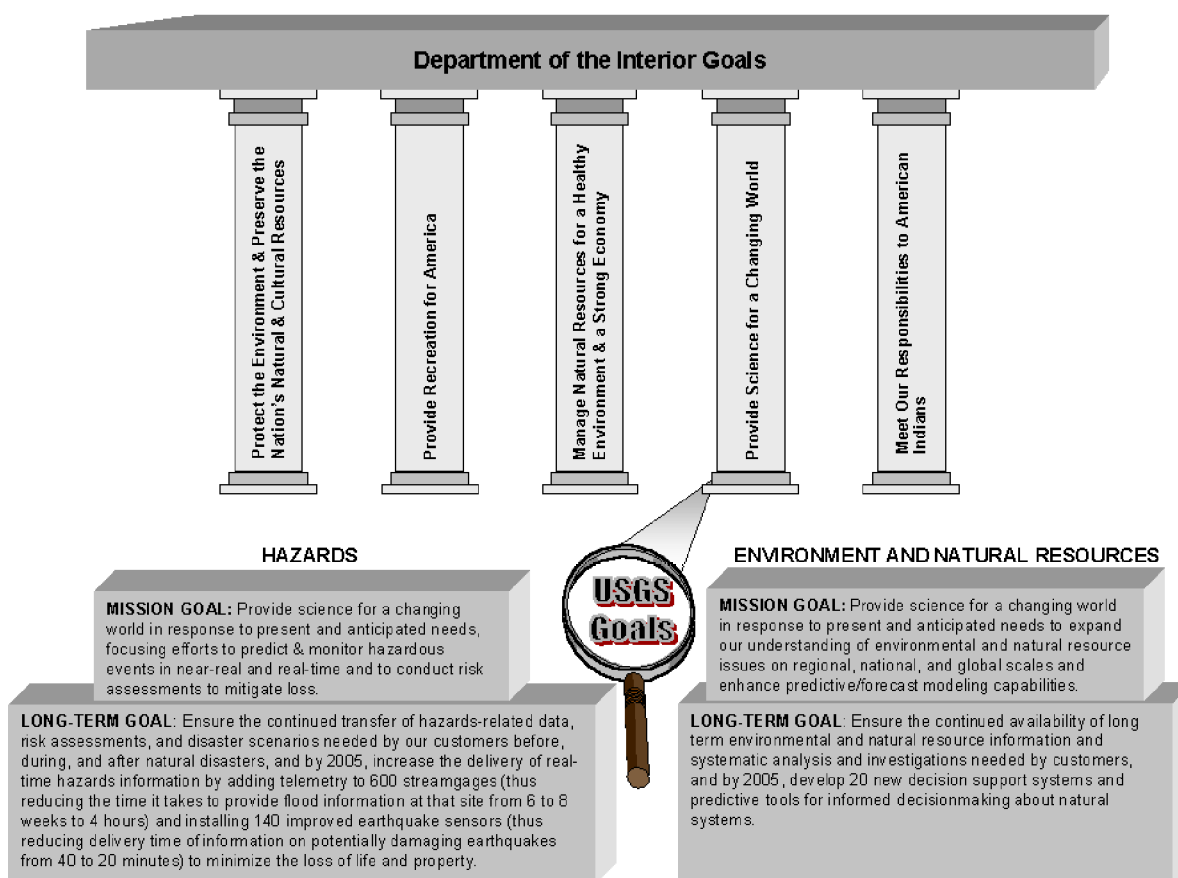
- describe and understand the Earth;
- minimize loss of life and property from natural disasters;
- manage water, biological, energy and mineral resources; and
- enhance and protect our quality of life.

### **Strategic Direction**

The USGS will combine and enhance our diverse programs, capabilities, and talents with increased customer involvement to strengthen our science leadership and contribution to the resolution of complex issues.

## Goal Links

The U.S. Geological Survey has 2 Mission Goals and 2 Long-term Goals. The Mission and Long-term Goals address program activities in the Hazards and Environment and Natural Resources areas. The Mission and Long-term Goals directly support the Department of the Interior Goal # 4, “Provide Science for a Changing World.” As such, USGS science contributes to all of the Department’s goals, by focusing on the provision of scientific information to support these efforts.



Our vision, mission, and strategic direction:

- focus on responsiveness and service provided to our **customers**, underscoring the relevance and flexibility of science to meet customer needs, and

- are designed to convey a **corporate identity** that capitalizes on the combined expertise of our multiple scientific disciplines and that makes a commitment to pursuing a more integrated approach to both our monitoring and research functions for any hazards and environment and natural-resource related issues.

Our goals and performance measures link to achievement of the Department's defined outcomes for their goal to "Provide science for a changing world":

- Resource managers make decisions based on accurate, reliable, and impartial scientific information.
- The loss of life and property from natural disasters is minimized through access and availability of timely scientific information.
- Federal, State, and local governments and the private sector have access to shared national databases of natural resources information.
- The public has easy access and availability to Earth science information.

USGS and the resource management bureaus of the Department of the Interior have formalized a process to facilitate provision of sound and effective USGS science support for the DOI bureaus and agreement on the nature and level of support provided and to provide input to USGS for defining GPRA metrics and outcomes. Consultation and project prioritization steps are scheduled leading up to submission of the USGS annual budget to the Department. The process will be fully implemented for the FY 2001 budget, but will be piloted with National Park Service, Bureau of Land Management, and US Fish and Wildlife Service for development of the Science for DOI Priorities initiative in the FY 2000 budget.

## Goals

Adjustments to our Strategic Plan have resulted in a substantial reduction in the number of goals and performance measures. This reduction reflects an aggregation of 8 former “business activities” into 2 Mission Goals and 67 former “performance measures” into 2 Long-term Goals. Following are crosswalks of mission language and goal structure/statistics between the September 1997 and September 1998 Strategic Plans.

Old Strategic Plan	Refocused Strategic Plan
<b>Vision</b> The U.S. Geological Survey is an earth science organization that is recognized worldwide as scientifically credible, objective, and demonstrably relevant to society's needs.	<b>Vision</b> The USGS is a world leader in the natural sciences through our scientific excellence and responsiveness to society's needs.
<b>Mission</b> The U.S. Geological Survey provides the Nation with reliable, impartial information to describe and understand the Earth. This information is used to: <ul style="list-style-type: none"> <li>• minimize loss of life and property from natural disasters;</li> <li>• manage water, biological, energy, and mineral resources;</li> <li>• enhance and protect the quality of life; and</li> <li>• contribute to wise economic and physical development.</li> </ul>	<b>Mission</b> The USGS serves the Nation by providing reliable scientific information to: <ul style="list-style-type: none"> <li>• describe and understand the Earth;</li> <li>• minimize loss of life and property from natural disasters;</li> <li>• manage water, biological, energy and mineral resources; and</li> <li>• enhance and protect our quality of life.</li> </ul>
	<b>Strategic Direction</b> The USGS will combine and enhance our diverse programs, capabilities, and talents with increased customer involvement to strengthen our science leadership and contribution to the resolution of complex issues.

GPRA Strategic Plan			
GPRA Annual Plan			
Old GPRA Strategic Plan	New GPRA Strategic Plan	Old GPRA Strategic Plan	New GPRA Strategic Plan
8 Strategic Business Activity Goals	2 Mission Goals	67 Strategic Performance Goals	2 Long-term Goals
BA-2 Hazards	Hazards	14	Hazards
BA-1 Water Availability & Quality	Environment & Natural Resources	11	Environment & Natural Resources
BA-3 Geographic & Cartographic Information		7	
BA-4 Contaminated Environments		6	
BA-5 Land and Water Use		9	
BA-6 Nonrenewable Resources		5	
BA-7 Environmental Effects on Human Health		3	
BA-8 Biological Resources		12	

## Hazards

Hazards are unpreventable natural events that, by their nature, may expose our Nation's population to the risk of death or injury and may damage or destroy private property, societal infrastructure, and agricultural or other developed land. Hazards include earthquakes, volcanoes, landslides, geomagnetic (solar) storms, floods, coastal erosion, tsunamis, wildland fire, and wildlife disease.

USGS hazards mission activities deal with describing, documenting, and understanding natural hazards and their risks. These activities include long-term monitoring and forecasting, short-term prediction, real-time monitoring and communication with civil authorities and others during a crisis. Other significant activities are post-crisis analysis with scenario formulation to develop strategies to mitigate the impact of future events and preparation of coordinated risk assessments for regions vulnerable to natural hazards.

**Mission Goal**--Provide science for a changing world in response to present and anticipated needs focusing efforts to predict and monitor hazardous events in near-real and real-time and to conduct risk assessments to mitigate loss.

**Long-term Goal**--Ensure the continued transfer of hazards-related data, risk assessments, and

disaster scenarios needed by our customers before, during, and after natural disasters, and by 2005 increase the delivery of real time hazards information by adding telemetry to 600 stream gages (thus reducing the time it takes to provide flood information at that site from 6 to 8 weeks to 4 hours) and installing 140 improved earthquake sensors (thus reducing delivery time of information on potentially damaging earthquakes from 40 to 20 minutes) to minimize loss of life and property.

### *Strategy for achieving the goal*

In the long term, USGS will enhance its ability to characterize and monitor hazardous events in near-real and real-time by adding telemetered streamgages and earthquake sensors capable of delivering information nearly instantaneously. In addition, long-term data vital to both emergency response and to analysis of flood, earthquake and other hazard risk will continue to be collected and maintained through current monitoring networks. We will upgrade our monitoring infrastructure. To better target key customers, a hazards network profile will be developed that will allow us to evaluate whether decision-makers are receiving timely hazards information. USGS will measure the reliability, delivery times, and accuracy of its real-time hazards information in order to evaluate improvements. USGS will improve the utility of its information by conducting risk assessments to mitigate losses by identifying for decision makers which areas are most vulnerable to damage by particular hazards. Key scientific datasets integral to the delivery of hazards information -- accurate maps and geographic information, for example -- will be made easier to interpret and integrate in order to assist in rescue, recovery and reconstruction efforts. The quality of data will be continually improved by development of standards and protocols and improvements to the precision and accuracy of data collected.

USGS will focus on key users of hazards information, such as emergency managers, community planners and citizens to ensure that their needs are understood and are being met. We will increase development and delivery of products and services tailored to the needs of these customers, and work with customers in developing long-term strategies for anticipating their future needs.

USGS will maximize the efficiency of its administrative, science support and programmatic activities by streamlining systems for hazards data delivery and eliminating any duplication or overlap. We will optimize our facilities infrastructure, use, and quality to ensure the proper balance between the need to locate near our customers and the need to minimize costs.

USGS employees are the core of our long-term strategy for achieving the Hazards Goal. They are in the field before, during, and after events installing instruments and making measurements. We will evaluate our current capabilities and skills and actively invest in training employees in the skills needed to keep pace with technology, as well as the scientific skills to understand and model natural systems, decision support systems, and information technologies such as geographic information systems and web delivery of data. USGS is aligning its rewards systems to reinforce employee responsiveness to customers' needs such as better prediction of and response to hazards and development of tools tailored to the needs of emergency managers.

Finally, we will increase our flexibility to respond quickly and effectively to natural disasters by using new contractual vehicles for obtaining new skills, removing barriers for cross-organizational resource sharing, and increasing use of cooperative agreements with other entities responsible for emergency response.

## ***Key Factors Affecting Goal Achievement***

**Hazards Strike Locally:** To reduce loss of life and property means having very comprehensive networks and other observing systems that cover any area where there is a likely probability that a particular kind of hazard event can strike, because we cannot know the exact location of a disaster very far in advance. It also means being able to communicate and deliver needed information to the people actually affected, and to the local first responders. This requires a very comprehensive, and targetable, communications and delivery system.

**All Mitigation Is Local:** Land use regulation and planning generally is controlled at the local level in the US. Many types of emergency response plans also are developed locally. To successfully reduce loss of life and property, we need to be able to target individual urban areas, counties, etc. with hazards information and scenarios, to engage individuals and their communities in both mitigation and preparedness plans. This means enhancing our ability to work with organizations such as National Emergency Managers Association and National Association of Counties that represent States and localities.

**New Technologies:** We will be helped by advances in scientific concepts and models, monitoring systems and communications systems that make it possible to detect, analyze, interpret and communicate disaster information faster, more completely, and more effectively, to the appropriate audiences.

**New Vulnerabilities:** The downside of technological advance is that we as a society are becoming more dependent on increasingly elaborate infrastructures. Areas vulnerable to natural hazards often are attractive for population growth. The population is growing, and at the same time, our society is becoming more highly urbanized. Population growth, urbanization, and technological advance are converging to produce more tightly integrated infrastructures for power supply (national power grids), communications, transportation networks, health services, water supply and sewerage control systems. More and more people are both absolutely dependent on these services, and yet may be unaware of their dependence and vulnerability.

**Limits of personal experience:** The ability of individuals to assimilate even the most accurate and timely hazards information is affected by their own prior experience. People who move into a seismically active area from elsewhere may not understand what an earthquake can do until they've experienced at least a moderate quake. New arrivals in a coastal region may not accurately picture what a big hurricane can do, and may actively resist land-use restrictions designed to protect them. Flashfloods, brush fires, debris flows and other very local hazards are always a shock to newcomers in the areas affected. Hazards with long recurrence intervals, such as tsunamis and volcanic eruptions and lahars (a landslide or mudflow on the flank of a volcano)

are even less familiar to most people. The public may appreciate hearing about hazards, but their willingness to move their own house or the local elementary school to mitigate for any or several specific hazards may be limited, until such an event is fresh in the community's mind.

### ***Cross-cutting relationships to other bureaus and agencies:***

Cross-cutting programs and activities are undertaken by more than 1 agency to achieve a common purpose or objective. The USGS actively seeks to partner with other Federal, State, and local agencies in addressing its Hazards-related mission and long-term goals.

The USGS has the primary Federal responsibility for monitoring and issuing warnings concerning earthquakes, volcanoes, landslides, geomagnetic storms, and wildlife disease outbreaks. The USGS also monitors about 25 volcanoes posing the greatest risk and provides information on potential eruptions to Federal, State, and local emergency agencies. For example, the USGS cooperates with the National Weather Service and the Federal Aviation Administration who provide warnings to the airline industry and aircraft on hazards due to volcanic ash from explosive eruptions. The USGS partners with the national defense and intelligence communities in a “dual-use” access to National Technical Means satellite data during natural disasters. The USGS provides the stream gage and related hydrologic information needed by the National Weather Service in predicting and monitoring floods, and works closely with the National Oceanic and Atmospheric Administration in monitoring coastal erosion and tsunamis. The USGS works with the National Interagency Fire Center and many other agencies in monitoring wildfire potential. In all of these programs, USGS hazards experts work closely with Federal Emergency Management Agency as well as State and local partners, in pursuit of the national goal of reducing the toll of natural disasters.

The USGS cooperates and coordinates closely with local, State, and other Federal agencies and the university community to determine and provide for their needs for earth science information critical for developing mitigation strategies. For example, the USGS is an important partner of the National Earthquake Hazards Reduction Program, cooperating closely with the Federal Emergency Management Agency, the National Science Foundation, and the National Institute of Standards and Technology. Through these and other cooperative arrangements, the USGS helps ensure that the needs for risk assessments of hazards are met.

Emergency management and public safety officials need accurate forecasts of floods to make evacuation decisions, as well as decisions on where to focus flood-fighting efforts. The National Weather Service relies on streamflow information from USGS streamgages in making its flood forecasts. USGS information on the discharge, height, and velocity of potential floods is also used by utility companies, transportation agencies, and engineering firms to help design dams, bridges and roadways.



## Environment and Natural Resources

Our Nation's environment — the air, water, land, and plant and animal life — is constantly changing as natural processes and human actions affect it. Changes in demographics also affect the competition for and use of the renewable and nonrenewable natural resources — land, water, minerals, and energy — needed to sustain life and to maintain and enhance our Nation's economic strength. The traditional boundaries between environment and natural resources science are increasingly blurring as land and resource management decisions deal with increasingly complex issues affecting both. The need for cross-disciplinary integrated science has never been more apparent. USGS environment and natural resources mission activities deal with studies of natural, physical, chemical, and biological processes, and of the results of human actions. These studies encompass data collection, long-term assessments, ecosystem analysis, monitoring change, and forecasting the changes that may be expected in the future.

**Mission Goal--** Provide science for a changing world in response to present and anticipated needs to expand our understanding of environmental and natural resource issues on regional, national, and global scales and enhance predictive/forecast modeling capabilities.

**Long-term Goal--** Ensure the continued availability of long-term environmental and natural resource information and systematic analysis and investigations needed by customers, and by 2005, develop 20 new decision support systems and predictive tools for informed decisionmaking about natural systems.

### *Strategy for Achieving the Goal*

In the long term, USGS will provide its customers with better understanding of natural systems at all scales, with more and better predictive tools and decision support systems, and with increased access to and usability of its data. In particular, USGS will implement its Information Infrastructure Plan to ensure that data comply with common standards and protocols. USGS will continue to improve the quality and usability of its long term datasets: National Water Quality Assessments (NAWQA), mineral and energy information, biological data and information, water use information and high-quality digital maps depicting the character of the earth's surface. We will also develop specialized products to better serve customers needs. We will focus on key users of environment and natural resources information, such as federal, state and local managers, to ensure that their needs are understood and are being met. USGS will increase development and delivery of products and services tailored to the needs of these customers, and work with customers in developing long-term strategies for anticipating their future needs. In particular, we emphasize developing predictive capabilities for decision-makers by developing forecasting and predictive models and sophisticated decision support systems that allow managers and decision makers to ask "what if" questions and develop alternative scenarios.

USGS will improve the efficiency of its administrative, science support and programmatic activities to streamline systems for delivery of environment and natural resources data and

information and identifying and eliminating any duplication or overlap. We will optimize our facilities infrastructure, use, and quality to balance the need to locate near customers who use our information and the need to minimize costs.

As with the Hazards Strategic Goal, USGS employees are the core of our long-term strategy for achieving the Environment and Natural Resources Goal. USGS will assess its current capabilities and skills and actively invest in training its employees in the skills needed to improve our ability to understand natural systems, develop improved forecasting and predictive models and better communicate with customers. USGS is aligning its rewards systems so that contributions by employees to meeting key customers needs are fully rewarded. Finally, USGS will take steps to increase its flexibility to respond quickly and effectively to the needs of our customers by putting in place new contractual vehicles for obtaining new skills, removing barriers for cross-organizational resource sharing, and increasing its use of cooperative agreements with other entities who use our data and information on natural resources and the environment.

### ***Key Factors Affecting Goal Achievement***

There are several key factors external to the U.S. Geological Survey and beyond its control that could significantly affect the achievement of this goal:

- The **USGS relies heavily on** a wide variety of **partnerships** with other Federal, State, local, international, and private entities to carry out its mission. While the USGS seeks to provide impartial, technically defensible scientific research, data, and interpretations, it has no direct control over the individual actions of these entities.
- The USGS depends on the **willingness of private landowners**, regulatory and management agencies, and private industry for access to and permission to collect and use cartographic, geographic, geologic, biologic and hydrologic data.
- We **need established standards and protocols** for data collection to ensure that interpretations and decisions are based on valid data. Data collected using different procedures and analyzed using different methods may not be comparable. A lack of standardized protocols and comparability will significantly limit the ability of scientists to use all of the available data in their analyses, and may adversely affect the decisionmaking process for managers and regulators.
- The USGS cannot, and **does not** seek, to **collect all** of the environmental and natural resources **data** required for managers, regulators, and the general public to make informed decisions. Given the numbers of new chemicals and compounds being created and potentially released to the environment, it is clear that the collection of earth and biological sciences data will include partnerships and cooperation between Federal, state, local, private, and industrial entities.
- The public perspective of what is **environmentally acceptable** may change over time and may vary regionally. This perspective may affect how our scientific results are used in

decisionmaking.

### ***Cross-cutting relationships to other bureaus and agencies***

Cross-cutting programs and activities are undertaken by more than 1 agency to achieve a common purpose or objective. The USGS actively seeks to partner with other Federal, State, and local agencies in addressing its Environment and Natural Resources-related mission and long-term goals.

Partnerships, cooperation, and coordination with other entities is a critical component of USGS programs. These relationships are based on USGS conducting or overseeing studies that provide information to meet the science needs of other agencies. Using partnerships to meet the science needs of other agencies helps to prevent the duplication of effort because of the communication that must occur in forming and continuing such partnerships. For many reasons, data collected by the USGS and the results of its studies are accepted as valid by parties on both sides of disputes and furnish the basis for many water allocation compacts, court decrees, and resource planning activities among and within States.

- The USGS provides government-wide leadership to ensure coordinated planning and execution of Federal geospatial mapping efforts through its chairmanship of the Federal Geographic Data Committee (FGDC) Subcommittee on Base Cartographic Data and responsibility for the FGDC Secretariat. The Interior Geographic Data Committee Base Mapping Working Group determines the priority areas for data collection in the upcoming fiscal year. The National Spatial Data Infrastructure (NSDI) Competitive Cooperative Agreements Program was established by the FGDC to help form partnerships with the non-Federal sector that will assist in the evolution of the NSDI.
- The USGS has cooperative agreements with map and digital dealers to sell and distribute USGS products. There currently are more than 1,500 business partners in the map dealer program.
- The USGS is actively seeking to expand its use of Cooperative Research and Development Agreements (CRADAs), which enable Federal agencies to work with the commercial sector in the area of technology transfer. CRADA's have enabled the USGS to work closely with private industry, sharing expertise in new and emerging technologies to the mutual benefit of USGS and its commercial partners.
- The USGS is the primary provider of earth science mineral and energy resource information and assessments for Federal agencies (such as the Bureau of Land Management, Minerals Management Service, and the U.S. Forest Service) who are responsible for managing Federal lands and the Exclusive Economic Zone. The USGS cooperates with many local and State agencies and coal and electric power producers to assess the availability and quality of coal resources. The USGS cooperates with State geological surveys in conducting coal availability and coal quality studies. Every five

years, the USGS publishes an assessment of the Nation's oil and natural gas resources. The assessment is used by land managers, energy producers, utility managers, and policy makers among others. The USGS cooperates with hundreds of domestic and international producers and users of mineral commodities to compile reports on the supply and utilization of these resources for purposes of economic development and national security.

- The USGS coordinates with a large number of local, State, and Federal agencies on a wide range of geologic, coastal, and marine studies. For example, the USGS cooperates and coordinates with Federal land management agencies, including BLM, USFS, NPS, USFWS, BIA, and others to provide basic geologic and interpretive information tailored to their issues. On environmental issues, the USGS coordinates with the U.S. Environmental Protection Agency, the Department of Energy, the Department of Defense, and State and local environmental agencies to assist in characterizing sites and providing needed information on the nature, magnitude, and source of contamination problems. In the coastal environment, the USGS cooperates closely with the National Marine Fisheries Service, and the Sanctuaries and Reserves Division of the National Oceanic and Atmospheric Administration and the U.S. Army Corps of Engineers to provide the marine and coastal geologic information necessary for developing management plans.
- USGS relies on more than 1,200 State and local partners and about 30 Federal partners in developing its water information.
- USGS conducts many diverse activities in cooperation with the Corps of Engineers, the National Park Service, the Bureau of Reclamation, Environmental Protection Agency, Department of Transportation, and others. For example, the National Water-Quality Assessment Program performs water quality sampling activities on selected National Park lands.
- USGS is the largest collector of water information in the United States. Under the December 10, 1991, OMB memorandum, the Department of the Interior, through the USGS, is assigned lead responsibility for the coordination of water resources information in the Federal Government and with the non-Federal sector. The OMB memorandum provides guidance and sets objectives for the Water Information Coordination Program.
- The USGS provides scientific support to the Advisory Committee on Water Information. The purpose of the Committee is to represent the interests of water-information users and professionals in advising the Federal government on activities and plans related to Federal water-information programs, and the effectiveness of those programs in meeting the Nation's water-information needs.
- USGS also serves, on a reimbursable basis, as the primary source of hydrologic information to many other Federal agencies and through the Bureau of Indian Affairs to American Indian/Alaska Native governments. For example, USGS provides to the Department of Energy most of the hydrologic and geologic capability for evaluating the

suitability of Yucca Mountain (Nevada) as the site of the Nation's high-level nuclear waste repository. USGS characterizes the hydrogeologic settings for use by the Department of Energy, Department of Defense, and the U.S. Environmental Protection Agency at many sites where they have responsibility for ground-water contamination cleanup.

- The USGS has in place a process that involves its customers and colleagues in identifying the most important, urgent needs for science information, and ranking them in priority order. This allows us to identify similar needs in common geographic areas to avoid duplication of effort.
- USGS scientists collaborate with other scientists, customers, and partners in interagency ecosystem initiatives including: South Florida, San Francisco Bay, Pacific Northwest, Platte River, Mojave Desert, and Yellowstone. Scientists are working together to understand, evaluate, and provide options for restoring fish and wildlife habitats and better guide resource management decisions.
- The USGS GAP Analysis program involves over 400 collaborating organizations including business, academia, and local and State governments. A digitized spatial database of vegetative types, property boundaries, locations of wildlife habitats, land use types, cultural features, and other features are prepared and used to produce maps showing the juxtaposition of all the attributes and features relevant to a given situation.
- The USGS has 40 Cooperative Research Units located at cooperating universities in 38 States. These Units involve the cooperation of the State Wildlife Agency, the university, and USGS.
- The USGS development of the National Biological Information Infrastructure (NBII) and the National Spatial Data Infrastructure (including the Community Federal Information Partnership) provides the leadership for these data bases to allow many scientific organizations to collaborate in the building of a world wide network of scientific information that may be accessed quickly and efficiently via the World Wide Web and associated networks, and powerful search engines.

## **Relationship Between Long-term Goals and Annual Goals**

The two mission goals from the USGS strategic plan are used as the GPRA program activity in the Annual Performance Plan. Each mission goal or GPRA Program Activity has one associated long-term goal which identifies target levels and the time frame of performance for the strategic plan. Each of the Strategic Plan's long-term goals has one associated annual goal that identifies the annual performance increment necessary to achieve the long-term goal. Each annual goal has five performance measures making a total of ten for the entire Annual Plan. "Stakeholder meetings" are identified as performance measures for each of the annual goals to ensure and capture follow-through on the strategic direction's focus on "increased customer involvement to strengthen our science leadership and contribution to the resolution of complex issues." An index of common goal-related terms is included in Appendix A.

## Evaluations

USGS policy regarding evaluations recognizes several types of reviews including:

- Peer review of scientific programs, proposals, projects, and products by qualified scientific and/or technical experts in the relevant disciplines.
- Management review of programs, proposals, projects, products, and customer information by USGS supervisors and managers for a variety of purposes including confirming that the objectives of programs and projects are being met.

The policy provides for both internal and external reviews by USGS and non-USGS scientists, technicians, or specialists who “are not involved in the specific proposal, project, program, or product under review.”

The goal of the review policy is to conduct an independent external peer review of ongoing programs about every five years, combined with more frequent independent internal management reviews. The evaluations are used for a number of purposes including:

- improve the accountability and quality of programs;
- identify and fill in gaps in programs;
- redirect or reaffirm program directions;
- identify and recommend downsizing of low-priority programs;
- identify and provide guidance for opportunities for development of new high-priority programs; and
- provide information that can be used to reward and/or motivate managers and scientists.

The National Research Council is conducting a study of the future role of the US Geological Survey in the 21st Century. USGS has also participated in a review of Federal mapping programs being conducted by the National Academy of Public Administration (NAPA) in response to a directive contained in FY 1996 Appropriations Committee Report 104-173 from the House of Representatives. The NAPA also is assisting the USGS by preparing a preliminary study of factors that may potentially limit access to the information needed by governments and others in the disaster management process. This study is part of the effort to begin developing the Global Disaster Information Network (GDIN). In addition, several program level evaluations are planned for the next several years: the specific list is currently being developed.

**Table 2, USGS Program Evaluations, Scope, Methodology, and Departmental Goals**

<b>Program</b>	<b>Scope</b>	<b>Methodology</b>	<b>DOI Goal</b>
	<b><i>Hazards, Environment and Natural Resources Goals</i></b>		
USGS Strategic Directions	Help GS identify: <ul style="list-style-type: none"> <li>• and interpret changing society and political environments;</li> <li>• major societal needs that should be addressed by GS;</li> <li>• emerging scientific &amp; technical issues relevant to the GS mission;</li> <li>• opportunities for partnerships</li> </ul> Timeframe: 18 months (begin 7/20/98)	External review by the National Research Council	4
Global Disaster Information Network	Identify limitations on collecting, using, and providing access to electronic data bases that contain data needed in disaster management.	External review by National Academy of Public Administration	4
Y2K Program	Y2K directives compliance	DOI IG	4
Coastal and Marine Program	Entire program--starts in Fall 1998	External Review by NRC	4
	<b><i>Hazards Goals</i></b>		
Hydrologic hazards	Entire program. Report expected by 1/1/99.	External review by the NRC	4
Volcano Hazards Program	Entire program--review started in Fall 1998	External review by the NAS	4



	<b><i>Environment and Natural Resources Goals</i></b>		
Cooperative Programs	review of data collection program strategies and plans by cooperators and partners	Internal/External 1. Annual Cooperator Program Workshops 2. USGS/NIMA Strategic Partnership Biennial Meetings 3. USGS/USFS Single-edition Steering Committee 4. National digital Orthophoto Steering Committee	4
Landsat 7 program management review	1. Satellite Data archival and information management	Internal/External review with partners 1. NASA/NOAA/USGS	4
Earth Science Information management and Delivery	2. Review of business practices and pricing	2. International Map Trade Association Business Partner Program Review	4
<u>National Mapping:</u>	Entire Program--review of program execution	Internal by senior management staff	4
Global Change Wetlands	Entire program--completed 2/13/98	Internal/External Review	4
Fisheries and aquatic resources	Entire program-- started 8/10/98	Internal/External Review	4
Status and trends	Entire program--starting 2 <sup>nd</sup> qtr FY 99	External Review	4
Mapping and geographic information services	Looked at options for consolidating federal mapping functions existence, structure, and funding levels for federal surveying and mapping functions--completed 1/98	External review and report by the National Academy of Public Administration	4

Watersheds and global change	Entire program--review completed in calendar 1997	External by National Academy of Science	4
Ground-water Resources	Entire program--review of regional ground-water studies initiated in FY 1998	External review by the NRC	4
Energy Program	Entire program-report completed in 1999	External review by National Academy of Science	4
National Cooperative Geologic Mapping Program	Entire program--reviewed annually--legislatively authorized	External Advisory Committee	4
South Florida Ecosystems Restoration	Government-wide	GAO Audit and Programmatic Evaluation	4
Upper Mississippi River System Environmental Management Program	Activities of the USGS Environmental Management Technical Center--Report completed 7/27/98	DOI Inspector General Survey Report	4
EPA Superfund Support	Maintenance of complete, accurate, and current site-specific cost records for Superfund projects; billing documentation; appropriate reimbursements.	DOI IG audit	4

Evaluations used to develop the Strategic Plans include:

A Biological Survey for the Nation. National Research Council, Commission on the Formation of the National Biological Survey. 1993. Washington, D.C.

A Review of the USGS National Water Quality Assessment Pilot Program. National Research Council, Committee on U.S. Geological Survey, Water Resources Research, Water Science and Technology Board (WSTB). 1990. Washington, D.C.

Advanced Cartographic Systems Cost Effectiveness Analysis. Shapiro, Carl D., Amos, Larry

L., Brunson, Ernest B., Saghy, David L., Zoller, Donald H., 1989 Reston, VA.

Alternatives for Ground Water Cleanup. National Research Council, Committee on U.S. Geological Survey, Water Resources Research, Water Science and Technology Board (WSTB). 1994. Washington, D.C.

Bridge to a Sustainable Future: National Environmental Technology Strategy. Clinton, President William J. and Gore, Vice President Albert Jr., National Science and Technology Council, 1995. Washington, D.C.

Coordinating Geographic Data Acquisition and Access: The National Spatial Data Infrastructure (NSDI). Executive Order 12906: Clinton, President William J., 1994. Washington, D.C.

Enabling the Future: Linking Science And Technology To Societal Goals. Carnegie Commission on Science, Technology, and Government. 1992. Washington, D.C.

Final Report of the Panel to Review EOSDIS Plans. National Research Council, Commission on Physical Sciences, Mathematics, and Applications. 1994. Washington, D.C.

From Red Tape to Results: Creating a Government That Works Better & Costs Less: Report of the National Performance Review. Gore, Vice President Al. 1993. Washington, D.C.

Geographic Information for the 21<sup>st</sup> Century: Building a Strategy for the Nation National Academy of Public Administration. 1998. Washington, D.C.

Ground Water Models: Scientific and Regulatory Applications. National Research Council, Committee on U.S. Geological Survey, Water Resources Research, Water Science and Technology Board (WSTB). 1990. Washington, D.C.

Ground Water Vulnerability Assessment: Predicting Relative Contamination Potential Under Conditions of Uncertainty. National Research Council, Committee on U.S. Geological Survey, Water Resources Research, Water Science and Technology Board (WSTB). 1993. Washington, D.C.

Hazardous Materials in the Hydrologic Environment: the Role of Research by the U.S. Geological Survey. National Research Council, Committee on U.S. Geological Survey, Water Resources Research, Water Science and Technology Board (WSTB). 1996. Washington, D.C.

Irrigation-induced Water Quality Programs. National Research Council, Committee on U.S. Geological Survey, Water Resources Research, Water Science and Technology Board (WSTB). 1989. Washington, D.C.

Minerals and Society - A Review of the US Geological Survey's Mineral Resource Survey's Program Plan. National Research Council. 1996. Washington, D.C.

National Mapping Program User Evaluation of Selected Current Products, U.S. Geological Survey Open File Report 95-201: Snyder, Gregory I. 1995.

National Water Quality Assessment Program: The Challenge of National Synthesis. National Research Council, Committee on U.S. Geological Survey, Water Resources Research, Water Science and Technology Board (WSTB). 1994. Washington, D.C.

National Water Quality Monitoring and Assessment. National Research Council, Committee on U.S. Geological Survey, Water Resources Research, Water Science and Technology Board (WSTB). 1986. Washington, D.C.

Opportunities in the Hydrologic Sciences. National Research Council, Committee on U.S. Geological Survey, Water Resources Research, Water Science and Technology Board (WSTB). 1991. Washington, D.C.

Photomechanical versus computer-based methods of preparing and disseminating geologic-map information: A comparison of costs and savings. Matti, Jonathan C., Bernknopf, Richard L., Van Driel, J. Nicholas, Ulrich, George E., and Schindler, J. Stephen 1988. Reston, VA.

Preparing for the Twenty-First Century: A Report to the USGS Water Resources Division. National Research Council, Committee on U.S. Geological Survey, Water Resources Research, Water Science and Technology Board (WSTB). 1992. Washington, D.C.

Primary Mapping Economic Analysis. Shapiro, Carl D., Amos, Larry L, et al. 1988. Reston, VA.

Promoting the National Spatial Data Infrastructure Through Partnerships. National Research Council, Commission on Geosciences, Environment and Resources. 1994. Washington, D.C.

Regional Hydrology and the USGS Stream Gaging Network. National Research Council, Committee on U.S. Geological Survey, Water Resources Research, Water Science and Technology Board (WSTB). 1992. Washington, D.C.

Review of the Department of the Interior's National Irrigation Water Quality Program: Planning and Remediation. National Research Council, Committee on U.S. Geological Survey, Water Resources Research, Water Science and Technology Board (WSTB). 1996. Washington, D.C.

Science and Technology Long Range Strategic Planning. Carnegie Commission on Science, Technology, and Government. 1993. Washington, D.C.

Societal Value of Geologic Maps. U.S. Geological Survey Circular 1111: Bernknopf, Richard L., Brookshire, David S., Soller, David R., McKee, Michael J., Sutter, John F., Matti, Jonathan C., and Campbell, Russel H. 1993. Reston, VA.

Solid Earth Sciences and Society. National Research Council, Commission on Geosciences, Environment and Resources. 1993. Washington, D.C.

Technology for a Sustainable Future. Clinton, President William J. and Gore, Vice President Albert Jr., National Science and Technology Council, 1994. Washington, D.C.

Technology for America's Growth, A New Direction to Build Economic Strength. Clinton, President William J. and Gore, Vice President Albert Jr., 1993. Washington, D.C.

The Biological Resources Division's Client Information Needs Identification Report.

The Biological Resources Division's Implementation Plan for the Strategic Science Plan, September 1996.

The Biological Resources Division's Strategic Science Plan, October 1996.

Toward a Coordinated Spatial Data Infrastructure for the Nation. National Research Council, Commission on Geosciences, Environment and Resources. 1993. Washington, D.C.

Watershed research in the U.S. Geological Survey. National Research Council, Committee on the U.S. Geological Survey, Water Resources Research, Water Science and Technology Board (WSTB). 1997. Washington, D.C.

## Consultations

As part of the development of the original USGS Strategic Plan, consultations with the Department of the Interior, Office of Management and Budget, and the Congress were held throughout 1997 and 1998. Over the past 2 years, the USGS has committed significant resources to the development of Strategic Plans for each of its four Divisions. These plans reflect considerable input from active dialogue with stakeholders throughout the Nation.

This strategic plan was developed through an intensive effort by a task force of USGS upper-level decisionmakers using a balanced scorecard approach. These decision-makers relied extensively on the four Division Strategic Plans in revising the USGS Strategic Plan. This revision also includes feedback from DOI, OMB, the Congress, and other interested parties following their review of the original strategic plan.

Additional steps to be taken include:

- Continuing consultation with the DOI, OMB, and Congress to confirm the direction of the USGS Strategic Plan;
- Additional follow up with stakeholders regarding their reactions to the plan;
- Further development of an implementation plan and performance measures and completion--signposts that evaluate the effectiveness of implementation; and,
- Further implementation of the Government Performance and Results Act to ensure that formulation of annual performance plans is conducted within the programmatic framework provided by the USGS Strategic Plan and that feedback from customers and stakeholders in response to annual performance reporting is integrated into strategic plan revisions.

# Appendix A

## Index of Common Terms

**Mission Goal** is a classification identifying outcome oriented goals that define how an organization will carry out its mission.

**Long-Term Goals** are the "general performance goals and objectives" identified in the Government Performance and Results Act. They define the intended result, effect, or consequence for what the organization does. They provide a measurable indication of future success by providing target levels of performance and a time frame for accomplishment. Long-term goals should focus on outcomes rather than outputs (products and services).

**Annual Goal** is a one-year increment of the long-term goal. It contains a targeted level of performance to be achieved for a particular year. It is to be expressed in an objective, quantifiable, and measurable form. OMB approval of an alternative form of evaluating the success of a program is required if the annual goal cannot be expressed in an objective or quantifiable manner.

**GPRA Program Activity**, is described as the consolidation, aggregation or disaggregation of program activities that are covered or described by a set of performance goals, provided that any aggregation or consolidation does not omit or minimize the significance of any program constituting a major agency function or operation.

# Appendix B

## Authorizations

**43 U.S.C. 31 et seq.** The Organic Act of March 3, 1879, as amended, established the United States Geological Survey. This section provides, among other matters, that the USGS is directed to classify the public lands and examine the geological structure, mineral resources, and products within and outside the national domain. This section also establishes the Office of the Director of the Geological Survey, under the Department of the Interior. The Director is appointed by the President by and with the advice and consent of the Senate. P.L. 102-285, Sec. 10(a) establishes United States Geological Survey as its official name.

**2 U.S.C. 681-688** Congressional Budget and Impoundment Control Act of 1974 et seq. This section discusses the general Federal budget process, including rescissions, reservations, and deferrals of budget authority.

**5 U.S.C. 305** Title 5 deals with Government Organization and Employees. It includes personnel matters (classification, pay rates, benefits, etc.), the Freedom of Information Act, the Privacy Act, the Computer Matching and Privacy Act, and other issues related to general Federal functions and employment. The Appendices to Title 5 include the Federal Advisory Committee Act (FACA) of 1972, Inspector General mandates, and other matters that include Federal entities such as the USGS.

**7 U.S.C. 136** Federal Environmental Pesticide Control Act of 1972 (P. L. 92-516), amended the 1947 Federal Insecticide, Fungicide and Rodenticide Control Act (P.L. 80-102) program for controlling the sale and distribution of "economic poisons". The law requires registration of pesticides to avoid unreasonable adverse affects to humans or the environment.

**7 U.S.C. 2201** Rural Development and Policy Act of 1980. Requires the Secretary of Agriculture to obtain the advice of the Secretary of the Interior as to whether certain lands that are being patented, disposed of, or exchanged are mineral in character.

**7 U.S. C. 2204** Authorizes the Secretary of Agriculture to enter cooperative agreements with other Federal agencies and other organizations concerning water management for rural areas.

**15 U.S.C. 631, 631a** Small Business Acts. Fosters the economic interests of small businesses and sets forth procedures. Federal agencies are encourages to use small businesses for services and other contracted activities.

**15 U.S.C. 2901, 2908** The National Climate Program Act of 1978 established a national climate program to assist the Nation and the world in understanding and responding to natural and human-induced climate processes and their known and potential effects. The Department of the Interior has a mandated role in this Program.



**15 U.S.C. 2921-2953** The Global Change Research Act of 1990 (P.L. 101-606) established the United States Global Change Research Program aimed at understanding and responding to global change, including the cumulative effects of human activities and natural processes on the environment, to promote discussions toward international protocols in global change research, and for other purposes.

**15 U.S.C. 5631-5658** The Land Remote Sensing Policy Act of 1992 enables the United States to maintain its leadership in land remote sensing by providing data continuity for the Landsat program. The Act assigns responsibility for the "National Satellite Land Remote Sensing Data Archive" to the Department of the Interior. The Act also authorizes and encourages the Department of the Interior and other Federal agencies to carry out research and development programs in applications of these data and makes Landsat data available to the public.

**16 U.S.C. 17 et seq.** Parts of Title 16, Conservation, such as National Park Service Organic Act, as amended and supplemented, apply to the USGS. Notably, the Outdoor Recreation Act of June 23, 1936 authorizes the Secretary of the Interior to sponsor, engage in, and assist in research relating to outdoor recreation, directly or by contract or cooperative agreements, and make payments for such purposes; undertake studies and assemble information concerning outdoor recreation; and cooperate with educational institutions and others in order to assist in establishing education programs and activities and to encourage public use and benefits from outdoor recreation.

**16 U.S.C. 350 et seq.** Coastal Barrier Resources Act of 1992. Designates various underdeveloped coastal barrier islands depicted by specific maps for inclusions in the Coastal Barrier Resource System.

**16 U.S.C. 661 et seq.** Fish and Wildlife Coordination Act of March 10, 1934 (P. L. 79-732) authorizes the Secretary of the Interior to prepare plans to protect wildlife resources, to conduct surveys on public lands, and to accept funds or lands for related purposes; authorizes the investigation and reporting of proposed Federal actions that affect the development, protection, rearing, and stocking of all species of wildlife and their habitat in controlling losses, minimizing damages, and providing recommendations to minimize impacts on fish and wildlife resources.

**16 U.S.C. 703-711** Migratory Bird Treaty Act of 1918, as amended, Implements four international treaties that individually affect migratory birds common to the United States, Canada, Mexico, Japan, and the former Soviet Union. This Act establishes Federal responsibility for protection and management of migratory and nongame birds, including the establishment of season length based on scientific information relative to zones of temperature, distribution, abundance, breeding habits and times and lines of migratory flight of migratory birds. It also establishes the Secretary of the Interior's responsibility for bag limits, and other hunting regulations, and issuance of permits to band, possess, or otherwise make use of migratory birds.

**16 U.S.C. 715** Migratory Bird Conservation Act. Establishes the Migratory Bird Conservation Commission; authorizes the Secretary of the Interior to conduct investigations and publish documents related to North American birds.

**16 U.S.C. 742 et seq.** Fish and Wildlife Act of 1956 authorizes the Secretary of the Interior to conduct investigations, prepare and disseminate information, and make periodic reports to the public regarding the availability and abundance and the biological requirements of fish and wildlife resources; provides a comprehensive national fish and wildlife policy and authorizes the Secretary of the Interior to take steps required for the development, management, advancement, conservation, and protection of fisheries and wildlife resources through research, acquisition of refuge lands, development of existing facilities, and other means.

**16 U.S.C. 753a** The Fish and Wildlife Improvement Act of 1978 as amended by P.L. 95-616, authorizes the Secretary of the Interior to enter into cooperative agreements with colleges and universities, State fish and game agencies, and nonprofit organizations for the purpose of developing adequate, coordinated, cooperative research and training programs for fish and wildlife resources.

**16 U.S.C. 931-939** Great Lakes Fishery Act of 1956 implements the Convention on Great Lakes Fisheries between the United States and Canada; authorizes construction, operation and maintenance of sea lamprey control works; and established the Great Lakes Fisheries Commission.

**16 U.S.C. 1131** The Wilderness Act of 1964 and numerous subsequent related Acts requires the USGS to assess the mineral resources of each area proposed as wilderness or established as wilderness. The studies are to be on a planned and recurring basis. The original series of studies have been completed and no recurring studies have been requested or funded.

**16 U.S.C. 1361 et seq.** Marine Mammal Protection Act of 1972, as amended, establishes a responsibility to conserve marine mammals with management authority vested in the Department of the Interior for the sea otter, walrus, polar bear, dugong, and manatee.

**16 U.S.C. 1531 et seq.** Endangered Species Act of 1973, as amended, provides for the conservation of threatened and endangered species of fish, wildlife, and plants; and authorizes establishment of cooperative agreements and grants-in-aid to States that establish and maintain active and adequate programs for endangered and threatened wildlife and plants.

**16 U.S.C. 1600 et seq.** Forest and Rangeland Renewable Resources Planning Act of 1974, as amended by the National Forest Management Act of 1976. The USGS is a party in an interagency agreement with the Forest Service to assess the mineral resources of National Forests.

**16 U.S.C. 2801 et seq.** National Aquaculture Act of 1980 directs the Secretary of the Interior to participate in the development of a National Aquaculture Development Plan and authorizes research, development, and other activities to encourage the development of aquaculture in the United States.

**16 U.S.C. 3141 et seq.** The Alaska National Interest Lands Conservation Act of 1980. Section 1008 of the Act authorizes the Secretary of the Interior to conduct studies, or collect and analyze information obtained by permittees, of the oil and gas potential of non- North

Slope Federal lands. Section 1010 of the Act requires that the Secretary of the Interior assess the oil, gas, and other mineral potential, and expand the minerals data base, for all public lands in Alaska. Section 1011 of the Act requires an annual minerals report be presented to Congress. These responsibilities have been delegated to the USGS. The Geological Survey has made and may be called upon to make water studies pertinent to implementation of the Act.

**16 U.S.C. 4701 et seq.** Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (P.L. 101-646), establishes a Federal program to prevent introduction of and to control the spread of introduced aquatic nuisance species.

**22 U.S.C. 3201 et seq.** The Nuclear Non-Proliferation Act of 1978 provides that under Title V, United States Assistance to Developing Countries, the USGS assists, through the State Department and the Agency for International Development, in evaluation of nuclear facilities sites in other countries.

**25 U.S.C. 450 et seq.** The Tribal Self-Governance Act of 1994. The USGS participates in the Tribal Self-Governance Program by identifying USGS activities that may be available for Tribal operation under the Self-Governance Act. The USGS discusses its programs and activities with interested Tribal governments.

**29 U.S.C. 651** Occupational Safety and Health Act of 1970.

**30 U.S.C. 21(a)** The Mining and Minerals Policy Act of 1970 The Materials and Minerals Policy, Research and Development Act of 1980, emphasizes the USGS' responsibility to assess the mineral resources of the Nation.

**30 U.S.C. 201** The Federal Coal Leasing Amendments Act of 1976 provides that no lease sale may be held on Federal lands unless the lands containing the coal deposits have been included in a comprehensive land-use plan. The Act provides that the Secretary is authorized and directed to conduct a comprehensive exploratory program designed to obtain sufficient data and information to evaluate the extent, location, and potential for developing the known recoverable coal resources within the coal lands. The USGS provides data and information from its coal research and field investigations which are useful to the BLM to meet the requirements of the coal leasing program.

**30 U.S.C. 1026** Section 6 of the Geothermal Steam Act Amendments of 1988 requires the Secretary of the Interior to (1) maintain a monitoring program for significant thermal features within units of the National Park System, and (2) establish a research program to collect and assess data on the geothermal resources within units of the National Park System with significant thermal features in cooperation with the USGS. Section 8 of the Geothermal Steam Act Amendments of 1988 requires the USGS to conduct a study of the impact of present geothermal development in the vicinity of Yellowstone National Park on the thermal features within the park.

**30 U.S.C. 1028** The Energy Policy Act of 1992 directs the USGS to establish a cooperative government-private sector program with respect to hot dry rock geothermal energy resources on public lands, to convene a workshop of interested governmental and private parties to

discuss the regional potential for hot dry rock geothermal energy in the Eastern U.S., and to submit a report to Congress containing a summary of the findings and conclusions of the workshop. The Act also supports recurring assessments of the undiscovered oil and gas resources of the United States.

**30 U.S.C. 1121** The Geothermal Energy Research, Development, and Demonstration Act of 1974 provides that the Department of the Interior is responsible for the evaluation and the assessment of the geothermal resource base, including the development of exploration technologies.

**30 U.S.C. 1201 et seq.** Surface Mining Control and Reclamation Act of 1977, as amended, established the Office of Surface Mining Reclamation and Enforcement (OSM). OSM depends in part upon the USGS for a determination of the probable hydrologic consequences of mining and reclamation operations.

**30 U.S.C. 1419 et seq.** The Deep Seabed Hard Mineral Resources Act of 1980 provides authorization for conducting a continuing program of ocean research that "shall include the development, acceleration, and expansion, as appropriate, of the studies of the ecological, geological, and physical aspects of the deep seabed in general areas of the ocean where exploration and commercial development are likely to occur ...." The USGS, based on expertise developed in regional offshore geologic investigations, provides geological and mineral resource expertise in responding to the requirements of the Act.

**30 U.S.C. 1601 et seq.** The Mining and Minerals Policy Act of 1970, National Materials and Minerals Policy, Research and Development Act of 1980, reemphasize the responsibility of the USGS to assess the mineral resources of the Nation.

**31 U.S.C. 97** Fees and Charges for Government Services and Things of Value. This section directs that each service or thing of value provided to a person be self sustaining to the extent possible. Further, the head of each agency may prescribe regulations establishing the charge for each service or thing of value. Each charge is to be fair, based on the costs to the Government or the value of the service or thing to the recipient, public policy or interest served, and other relevant facts.

**31 U.S.C. 901** note Chief Financial Officers Act of 1990.

**31 U.S.C. 1535** Economy Act of 1932, as amended, authorizes any agency to obtain goods and services from and reimburse any other agency.

**31 U.S.C. 3302** The custody and possession of public money by Federal officials is dealt with in this section.

**31 U.S.C. 3501 et seq.** Budget Accounting and Procedures Act of 1950. Federal Managers' Financial Integrity Act of 1982.

**31 U.S.C. 3901-3906** Prompt Payment Act.

**31 U.S.C. 6301 et seq.** Federal Grant and Cooperative Agreement Act of 1977 provides criteria for distinguishing between contract, grant and cooperative agreement relationships and provides discretionary authority to vest title to equipment or other tangible personal property purchased with contract, grant or cooperative agreement funds in nonprofit research or higher education institutions.

**31 U.S.C. 7501** Single Audit Act of 1984 (P.L. 98-502) .

**31 U.S.C. 9701** Independent Office Appropriations Act of 1952; Title 5 - Fees and charges for Government services and things of value. This Act encouraged Federal services and products ("things of value") to be as financially self-sustaining as possible. It authorized costs to be charged for Federal services and products based on the costs to the Government, the value of the service or thing to the recipient, and the public policy or interest served.

**33 U.S.C. 883(a)** The Great Lakes Shoreline Mapping Act of 1987 in Section 3202(a) requires that the Director of the National Oceanic and Atmospheric Administration "...in consultation with the Director of the United States Geological Survey, shall submit to the Congress a plan for preparing maps of the shoreline of the Great Lakes under section 3203." The act further requires in Section 3203 that "...subject to authorization and appropriation of funds, the Director, in consultation with the Director of the United States Geological Survey, shall prepare maps of the shoreline areas of the Great Lakes."

**33 U.S.C. 1251 et seq.** Federal Water Pollution Control Act Amendments of 1972 and its successors, the Clean Water Act of 1977 and the Water Quality Act of 1987, authorize extensive water quality planning, studies, and monitoring under the direction primarily of the Environmental Protection Agency (EPA). The USGS is called upon to participate in many of these activities, partly by EPA and partly by State agencies in the Federal-State Cooperative Program. The act of 1987 includes new water quality work concerning Chesapeake Bay, the Great Lakes, Estuary and Clean Lakes Programs, and studies of water pollution problems in aquifers.

**33 U.S.C. 1401** The Marine Protection, Research, and Sanctuaries Act of 1972 provides that the Secretary of Commerce must consult with the Secretary of the Interior prior to designating marine sanctuaries. The USGS provides information regarding the energy and mineral resource potential in areas being considered for designation as marine sanctuaries.

**33 U.S.C. 2201 et seq.** Water Resources Development Act of 1990, authorizes a program for planning, construction, and evaluation of measures for fish and wildlife habitat rehabilitation and enhancement; cooperative effort and mutual assistance for use, protection, growth, and development of the Upper Mississippi River system; implementation of a long-term resource monitoring program; and implementation of a computerized inventory and analysis systems.

**33 U.S.C. 2701 et seq.** The Oil Pollution Act of 1990, provides enhanced capabilities for oil spill response and natural resource damage assessment. Includes the identification of ecologically sensitive areas and the preparation of scientific monitoring and evaluation plans. Research is to be directed and coordinated by the National Wetlands Research Center.

**40 U.S.C. 471** Federal Property and Administrative Services Act of 1949.

**40 U.S.C. 601** Public Buildings Amendment Act of 1972.

**40 U.S.C. 606** Public Buildings Act of 1959.

**41 U.S.C. 252** Competition in Contracting Act of 1984.

**41 U.S.C. 601-613** Contract Disputes Act of 1978.

**42 U.S.C. 300f et seq.** Pursuant to the Safe Drinking Water Act, as amended, the USGS and EPA have an interagency agreement covering aquifer studies conducted by the USGS relating to sole source aquifers.

**42 U.S.C. 1006 et seq.** Solid Waste Disposal Act of 1976.

**42 U.S.C. 2021b et seq.** Low-Level Radioactive Waste Policy Act (1980) required intra-State or multi-State (regional) arrangements for disposal of low-level radioactive waste by July 1, 1986. The USGS provides geohydrologic research and technology to Federal and State agencies developing plans for low level waste management. The amending Act of 1985 included approval of seven interstate compacts.

**42 U.S.C. 2210b, 2231** The Nuclear Regulatory Commission Authorization Act requires the Secretary of Energy to monitor and report to the President and Congress on the viability of the domestic uranium industry. Under a Memorandum of Understanding between the Department of Energy and the Department of the Interior, the USGS provides information on domestic uranium resources to the Energy Information Agency.

**42 U.S.C. 4321 et seq.** The National Environmental Policy Act of 1969, as amended. The USGS reviews Environmental Impact Statements (EIS') prepared by other agencies under the authority of this Act. The USGS reviews EIS for nuclear power plant sites and other critical facilities. The USGS is called upon to provide technical review or inputs to resource-related actions proposed by other Federal agencies.

**42 U.S.C. 5201 et seq.** The Disaster Relief Act of 1974, Section 202(a), states that "The President shall insure that all appropriate Federal agencies are prepared to issue warnings of disasters to State and local officials." In addition, Section 202(b) states that "The President shall direct appropriate Federal agencies to provide technical assistance to State and local governments to insure that timely and effective disaster warning is provided." The Director of the Geological Survey, through the Secretary of the Interior, has been delegated the responsibility to issue disaster warnings "...for an earthquake, volcanic eruption, landslide, or other geologic catastrophe."

**42 U.S.C. 5845(c)** The Energy Reorganization Act of 1974 directs all other Federal agencies to "... (2) ...furnish to the (Nuclear Regulatory) Commission...such research services... for the performance of its functions; and (3) consult and cooperate with the Commission on research development matters of mutual interest and provide such information and physical access to its facilities as will assist the Commission in acquiring the expertise necessary to perform its licensing and related regulatory functions." The USGS conducts geological mapping in areas where future nuclear reactor construction is anticipated and conducts topical investigations of

various geologic processes that could imperil the safe operation of the reactors or other critical energy facilities.

**42 U.S.C. 6901 et seq.** Resource Conservation and Recovery Act of 1976 and the Hazardous and Solid Waste Amendments of 1984 require EPA to promulgate guidelines and regulations for identification and management of solid waste, including its disposal. The expertise of the USGS is a present and potential source of assistance to EPA in defining and predicting the hydrologic effects of waste disposal.

**42 U.S.C. 7418, 7470, et seq.** The Clean Air Act of 1977, as amended, requires Federal facilities to comply with air quality standards to the same extent as non-governmental entities; and establishes requirements to prevent significant deterioration of air quality and, in particular, to preserve air quality in national parks, national wilderness areas, national monuments and national seashores.

**42 U.S.C. 7701 et seq.** The Earthquake Hazards Reduction Act of 1977 sets as a national goal the reduction in the risks of life and property from future earthquakes in the United States through the establishment and maintenance of a balanced earthquake program encompassing prediction and hazard assessment research, seismic monitoring and information dissemination. P.L. 101-614 reauthorizes the National Earthquake Hazards Reduction Act.

**42 U.S.C. 8901 et seq.** The Clean Air Act Amendments of 1990 (P.L. 101-549) called for continuation of the National Acid Precipitation Assessment Program (NAPAP) that was established under the Acid Precipitation Act of 1980. The Secretary of the Interior is renamed as a member of the task force that directs NAPAP. The USGS is an active participant in the research program and coordinates interagency monitoring of precipitation chemistry. The USGS National Coal Resources Data System was named by the Environmental Protection Agency (EPA) as the official data base for information on coal quality. The EPA, utility companies, and coal mining industries use the data base to estimate the amount of air pollution derived from coal -combustion.

**42 U.S.C. 9601 et seq.** Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) established a Superfund to help finance the massive cleanup programs needed at sites that are heavily contaminated with toxic wastes. The USGS is called upon by the EPA and State agencies to investigate and determine the extent of contamination and remedial measures at some of these sites. The amendments of 1986 reauthorize for 5 years EPA's program to clean up the Nation's worst toxic dump sites.

**42 U.S.C. 10101 et seq.** Nuclear Waste Policy Act of 1982 on disposal of high-level radioactive wastes defines DOE as lead agency with responsibility for siting, building, and operating high-level radioactive waste repositories. The law requires participation by the USGS in a consultative and review role to the DOE. The Nuclear Waste Policy Amendments Act of 1987 (Title V of the Omnibus Budget Reconciliation Act of 1987) identifies the Yucca Mountain, Nevada, site as the first site to be studied to see if it is suitable for disposal of high level nuclear waste. The 1987 Act also provides that the Department of Energy conduct a survey of potentially suitable sites for a monitored retrievable storage (MRS) facility.

**42 U.S.C. 10301 et seq.** The Water Resources Development Act of 1986, as amended, provides for water resources research, information transfer, and student training in grants and contract programs that will assist the Nation and the States in augmenting their science and technology to discover practical solutions to water shortage and quality deterioration problems.

**43 U.S.C. 31 et seq.** The Organic Act of March 3, 1879, as amended, established the United States Geological Survey. This section provides, among other matters, that the USGS is directed to classify the public lands and examine the geological structure, mineral resources, and products within and outside the national domain. This section also establishes the Office of the Director of the Geological Survey, under the Department of the Interior. The Director is appointed by the President by and with the advice and consent of the Senate. P.L. 102-285, Sec. 10(a) establishes United States Geological Survey as its official name.

Particularly: Section 4 of the Continental Scientific Drilling and Exploration Act of 1988 requires that "The Secretary of the Department of Energy, the Secretary of the Department of the Interior through the United States Geological Survey, and the Director of the National Science Foundation assure an effective, cooperative effort in furtherance of the Continental Scientific Drilling Program of the United States."

And: 43 U.S.C. 31c. National Geologic Mapping Act of 1992 (P.L. 102-285). Establishes in the USGS a National Cooperative Geologic Mapping Program. Section 4(c) states "The objectives of the geologic mapping program shall include (1) determining the Nation's geologic framework through systematic development of geologic maps at scales appropriate to the geologic setting and the perceived applications, such maps to be contributed to the national geologic map data base; (2) development of a complementary national geophysical-map data base, geochemical-map data base, and a geochronologic and paleontologic data base that provide value-added descriptive and interpretive information to the geologic-map data base; (3) application of cost-effective mapping techniques that assemble, produce, translate and disseminate geologic-map information and that render such information of greater application and benefit to the public; and (4) development of public awareness for the role and application of geologic-map information to the resolution of national issues of land use management."

**43 U.S.C. 38** Topographic surveys; marking elevations. This section provides for the establishment and location of permanent benchmarks used in the making of topographic surveys.

**43 U.S.C. 41** Publications and reports; preparation and sale. This section provides that the publications of the USGS shall consist of geological and economic maps illustrating the resources and classification of lands and other reports.

**43 U.S.C. 42 et seq.** Distribution of maps and atlases, etc. This section authorizes and directs the Director of the Geological Survey, upon the approval of the Secretary of the Interior, to distribute topographic and geologic maps and atlases of the United States. The prices and regulations are to be fixed by the Director with the approval of the Secretary. This Section further provides that copies of each map or atlas, not to exceed five hundred, shall be distributed gratuitously among foreign governments, departments of our own Government, literary and scientific associations, and to educational institutions or libraries. It also section



authorizes all receipts from the sale of maps sold or stored by the USGS to be retained by the USGS to supplement other available funds.

**43 U.S.C. 43** Copies to Senators, Representatives and Delegates. This section provides that one copy of each map and atlas shall be sent to each Senator, Representative, and Delegate in Congress, if published within his term, and that a second copy be placed at the disposal of each.

**43 U.S.C. 44** Sale of transfers or copies of data. This section provides that the Geological Survey may furnish copies of maps to any person, concern, institution, State or foreign government.

**43 U.S.C. 45** Production and sale of copies of photographs and records; disposition of receipts. This section authorizes the USGS to produce and sell on a reimbursable basis, copies of aerial or other photographs, mosaics, and other official records. It also discusses the disposition of the receipts from those sales.

**43 U.S.C. 49** Extension of cooperative work to Puerto Rico. This section authorizes the making of topographic surveys in Puerto Rico by the USGS.

**43 U.S.C. 50** The share of the USGS in any topographic mapping or water resources investigations carried on in cooperation with any State or municipality shall not exceed 50 per cent of the cost thereof.

**43 U.S.C. 364 et seq.** U.S. Board on Geographic Names. This law, approved July 25, 1947, establishes the U.S. Board on Geographic Names to provide for uniformity in geographic nomenclature and orthography throughout the Federal Government, and to promulgate in the name of the Board official geographic names as well as decisions and principles with respect to geographic names. The Secretary of the Interior provides staff assistance to the Board under the law.

**43 U.S.C. 371 note** Reclamation Projects Authorization and Adjustment Act of 1992.

**43 U.S.C. 506 et seq.** The Reclamation Safety of Dams Act of 1978 requires the USGS to participate in direct interchange of science information with other agencies. Geologic data developed under the Geologic Hazards Surveys are applicable to dam safety analyses.

**43 U.S.C. 1334 et seq.** Outer Continental Shelf (OCS) Lands Act, authorizes the Secretary of the Interior to prescribe rules and regulations to provide for the prevention of waste and conservation of the natural resources of the OCS; to conduct geological and geophysical explorations of the OCS; directs the Secretary of the Interior to conduct a study of any region in any gas and oil lease sale to obtain information necessary for assessment and management of environmental impacts on human, marine and coastal areas which may be affected by oil and gas development on such areas.

**43 U.S.C. 1701 et seq.** The Federal Land Policy and Management Act (FLPMA) of 1976 specifically requires that the USGS do a wilderness mineral survey by 1991 of each area Bureau of Land Management (BLM) recommends for wilderness suitability. The studies are to

be on a planned and recurring basis. The original series of studies have been completed. As part of the implementation of the FLPMA, the BLM enlists the USGS hydrologic data base and expertise in connection with BLM's responsibility regarding coal reserves on and beneath Federal lands.

**43 U.S.C. 1865** The OCS Lands Act Amendments of 1978 provide for management of oil and natural gas in the Outer Continental Shelf and for other purposes. The Minerals Management Service is responsible for carrying out all functions in direct support of management of the OCS program. The USGS provides indirect support to the Department's management activities through its basic mission to examine the geological structure, mineral resources, and products of the national domain which, offshore, includes the EEZ.

**44 U.S.C. 35** Paperwork Reduction Act.

**44 U.S.C. 1318** Classes and sizes of publications; report of mineral resources; number of copies; reprints; distribution. This section gives very specific and detailed instructions concerning the numbers of copies to be printed and the distribution of certain USGS publications.

**44 U.S.C. 1319** Specific appropriations required for monographs and bulletins. The scientific reports known as the monographs and bulletins of the USGS may not be published until specific, detailed estimates, and specific appropriations based on these estimates, are made for them.

**44 U.S.C. 1320** Distribution of publications to public libraries. The Director of the USGS shall distribute to public libraries that have not already received them, copies of sale publications on hand at the expiration of five years after date of delivery to the Survey document room, excepting a reserve number not to exceed two hundred copies.

**44 U.S.C. 1903** Distribution of publications to depositories; notice to Government components; cost of printing and binding. Upon request of the Superintendent of Documents, components of the Government ordering the printing of publications shall either increase or decrease the number of copies of publications furnished for distribution to designated depository libraries and State libraries so that the number of copies delivered to the Superintendent of Documents is equal to the number of libraries on the list.

**46 U.S.C. 31(a) and (b)** The Coastal Zone Management Act of 1976 provide that each department, agency, and instrumentality of the Executive Branch of the Federal Government may assist the Secretary of Commerce, on a reimbursable basis or otherwise, in carrying out research and technical assistance for coastal zone management.

**50 U.S.C. 98** The Strategic and Critical Materials Stock Piling Act of 1946 as amended by its Revision Act of 1979. Section 8 of the Act supports the USGS programs for assessment of domestic minerals, especially for strategic and critical minerals, to complement the Federal mineral stockpile program.

**P.L. 81-82, P.L. 82-231** Arkansas River Compact and Yellowstone River Compact, respectively. Congress has granted its consent to many interstate water compacts. For such

compacts, the USGS provides administrative support for the Federal representative, usually appointed by the President. Also, the USGS collects hydrologic data for 25 interstate compacts. The data collection is supported partly by the Federal Program and partly by the Federal-State Cooperative Program.

**P.L. 93-322** Special Energy Research and Development Appropriation Act, 1975, provided funds "for energy research and development activities of certain departments ...." The USGS water resources investigations in coal hydrology support that legislation.

**P.L. 102-580** Water Resources Development Act of 1992 establishes a National Contaminated Sediment Task Force, with USGS as a member, to conduct a comprehensive national survey of aquatic sediment quality.

**P.L. 104-106** Federal Acquisition Reform Act of 1996 mandates the continued career development and training of the acquisition workforce.

**P.L. 104-134** Debt Collection Improvement Act of 1996.

**P.L. 104-208** FY 1997 Omnibus Appropriations Act.

**P.L. 105-47** An Act to authorize appropriations for carrying out the Earthquake Hazards Reduction Act of 1977.

**P.L. 105-83** FY 1998 Interior and Related Agencies Appropriations Act.

**P.L. 105-97** National Wildlife Refuge System Improvement Act of 1997.